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AUDIT OF CHILDHOOD DIARRHOEAL MANAGEMENT BY HEALTH PROFESSIONALS IN NORTH EASTERN NIGERIA

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Abstract

Background: Diarrhoea is still an important cause of under-5 morbidity and mortality especially in developing countries, like Nigeria.

Objective: The management practices of childhood diarrhoea by nurses and mid-wives in two health institutions in Northeastern Nigeria were assessed.

Method: The study was conducted in the University of Maiduguri Teaching Hospital, Maiduguri and Federal Medical Centre Azare, Nigeria in June 2009 by administering closed ended self administered pre-tested questionnaire.

Results: A total of 86 nurses/midwives answered and returned the questionnaire. Of the 86 respondents, 66 were females, while the remaining 20 were males.

According to the respondents, bacteria is the commonest cause of childhood diarrhoea followed by teething; 36(41.9%) and 18(20.9), respectively. Seventy seven (89.5%) of the respondents would use ORS first in the treatment childhood diarrhoea. While 12 (14.0%) of the nurses/midwives identified up to three home fluids, apart from the "conventional" ORS/SSS that can be used in the management of childhood diarrhoea, 22 (25.6%) respondents identified no other home fluids. Although, up to 54 (62.8%) of the respondents would increase the feeding frequency of a child with diarrhoea, 17(19.8%) of them would stop feeding. At least one correct indication for referral and preventive measures of childhood diarrhoea was fielded by 50 (58.1%) and 73 (84.9%) of the respondents respectively.

Conclusion: Although the management practices of childhood diarrhoea among the nurses and midwives was generally satisfactory, some gaps were identified.

There is therefore the need for continued training of health workers in the management of common childhood illnesses.

Keywords: Childhood Diarrhoea, Management, Health Professionals, North-eastern Nigeria

Introduction

Diarrhoea is one of the most important cause of under-5 morbidity and mortality, causing an estimated one billion episodes of illness and 3-5 million deaths annually world-wide.[1,2] Many treatment options, including home based management and traditional methods have been used in different communities for the treatment of diarrhoea.[1-7] Apart from the use of oral rehydration solution (ORS), parenteral fluids and antibiotics, probiotics are also occasionally employed in the treatment of diarrhoea.[8] However, in spite of the successes recorded with the use of ORS in the management of diarrhoea; the impact of diarrhoeal disease in children is still enormous. Most of the diarrhoeal associated morbidity and mortality occur in the developing countries because children in these countries are more exposed to factors that increase susceptibility to infection with enteropathogens.[1,9] Another contributor to the alarming rates of the morbidity and mortality in children are due to gaps in knowledge, improper practices and sometimes attitudes of parents and health workers towards the management of childhood diarrhoea.[3, 5, 6, 10] Health education of mothers or care givers by health workers has always been emphasized as a way forward in achieving success in the management of diarrhoeal disease, especially at home.[3, 5, 6, 10]

The management practices of childhood diarrhoea among nurses' and mid-wives' in two health institutions in Northeastern Nigeria was assessed as this group of health professionals are in close contact with patients, parents and other care givers of children, and are usually involved in health talks and counseling in institutions and communities.
To the best of our knowledge, no similar study examining health professionals' diarrhoeal management practice was conducted in this region of the country.

Materials and Methods

The study was conducted in the University of Maiduguri Teaching Hospital, Maiduguri and Federal Medical Centre Azare, Nigeria in June 2009. A quantitative method was used by employing closed ended self administered pre-tested questionnaire. The questionnaires were anonymous and administered to nurses/midwives in the two institutions. Responses to the questionnaires were made individually and separately by each respondent at the same time in each of the hospitals, and the questionnaires were collected few minutes after they were administered. Responses to methods of diarrhoeal prevention were categorized into no correct method, 1-2 correct methods, and three or more correct methods. While the responses to indications for referral of children with diarrhoea were categorized into incorrect indication/s, correct and incorrect indications, 1-2 correct indications and three or more correct indications. In either case, if there was no response to the question by the respondent, such was also recorded. Data generated was entered into a computer and analyzed using SPSS version 13.0. Tables were used for data presentation where appropriate.

Results

A total of 86 nurses/midwives (n/m) answered and returned the questionnaires. Of the 86 respondents, 66 were females, while the remaining 20 were males. The age of the respondents ranged from 22 to 48 years. The response to the commonest cause of childhood diarrhoea is as shown in table 1. Bacteria was thought to be the commonest cause of childhood diarrhea followed by teething.

The response to the first treatment modality of childhood diarrhoea, revealed that; 77 (89.5%) of the respondents would use ORS/SSS, while four (4.7%) would use antibiotics and the remaining five (5.8%) gave no response.

Only 12 (14.0%) of the nurses/midwives identified up to three home fluids, apart from the "conventional" ORS/SSS that can be used in the management of children with diarrhoeal disease at home. While 11 (12.8%), 39 (45.3%) and 22 (25.6%) respondents, identified two, one and none other home fluids used in the treatment of childhood diarrhoea respectively, two (2.3%) fielded "wrong fluids". As for the duration of stay before discarding the prepared; 82 (95.3%) answered 24 hours, two (2.3%) answered "6-24" hours, and one each > 24 hours and "no response". Pertaining to the mechanism of action of ORS, 74 (86%) of the respondents indicated replacement of fluid as the mechanism of action, while 6 (7%) were not sure and the remaining 6 (7%) provided the mechanism of action of ORS as giving energy.

The response to the feeding requirement of children with diarrhoea by the respondents is shown in table 2. Majority 54 (62.8%) would increase the feeding frequency of the child with diarrhoea.

Table 1: *Frequency distribution of the perceived commonest cause of diarrhoea*

Commonest cause of Diarrhoea	Frequency	Percent
Bacteria	36	41.9
Teething	18	20.9
Viruses	8	9.3
Malabsorbtion	5	5.8
No Response	19	22.1
Total	**86**	**100**

Table 2: *Frequency distribution of response to feeding requirement of children with diarrhoea*

Feeding Options	Frequency	Percentage
Increase Feeding Frequency	54	62.7
Stop	17	19.8
Dilute Feeds	10	11.6
Continue Feeding as before	4	4.7
No Response	1	1.2
Total	**86**	100.00

Table 3: *Frequency distribution of the pattern of responses to diarrhoea prevention and indications for referral*

	Preventions					
Indications For Referral	No correct method	1-2 correct methods	=/> 3 correct methods	correct and incorrect methods	No response	Total
3 correct indications	0	9	3	2	0	14
1-2 correct indications	0	24	10	2	0	36
Correct and incorrect indications	0	10	2	1	0	13
No response	4	2	2	0	1	9
Incorrect indications	0	6	5	3	0	14
Total	**4**	**51**	**22**	**8**	**1**	**86**

While 50 (58.1%) of the respondents gave 1-3 correct indications for referral of the child with diarrhoea for possible in-patient treatment, as much as 73 (84.9%) respondents gave 1-3 correct preventive measures of childhood diarrhoea. Table 3 is a cross tabulation showing the frequency of response to the indications for referral of children with diarrhoea and prevention modalities of childhood diarrhoea by the respondents. Indications for referral given were dehydration/shock, bloody diarrhoea, and high fever. Others were loss of consciousness, severe weakness, and vomiting. Incorrect indications for referral by the respondents included more than two episodes of diarrhoea in a day, diarrhoea lasting more than 3 days and mucous in diarrhoeal stool. While the correct preventive modalities fielded, were hand washing, breast feeding, immunization, proper food/water handling and general sanitation of environs " Incorrect preventive" measures by respondents were few; these include boiling of drinking water and isolation of children with diarrhoea.

Discussion

The knowledge of management of childhood diarrhoea exhibited by the respondents was generally good, though some gaps were identified as well. Several pathogens have been implicated in causing childhood diarrhoea, but the proportion of "no response" and the respondents' choice of teething as a cause of diarrhoea indicate significant gap in knowledge, as the two responses put together accounted for up to 43% of the total responses. Although teething is believed to be associated with, diarrhoea in some cultures for long, medical evidence supporting that is lacking. Children generally erupt the primary dentition between the ages of 6 and 24 months and may contract diarrhoea due to their frequent hand to mouth practices in this period; thereby coming in contact with diarrhoea causing pathogens. Coincidentally, complementary feeds are also given at this age, which are naturally not as hygienic as the breast milk the babies were mainly fed on. These factors operating in isolation or combined may result in diarrhoea. Because diarrhoea usually occurs at a time when teething is the major structural change in the child, the cause of diarrhoea is wrongly attributed to teething. Teething should be seen as part of growth and development of the child and therefore ought not to be associated with most of the childhood illnesses[11] especially, diarrhoea. The increased diarrhoeal morbidity and mortality in children is attributable to their young age, less immunity against pathogens and other diarrhoeal risk factors.

While viruses account for majority of the causes of diarrhoea, especially acute diarrhoeal disease of childhood, only 9.3% of respondents fielded viruses as the cause of diarrhoea in children, and none included parasites as the cause of childhood diarrhoea. Again, this is another gap in knowledge (of exclusion) of the causes of diarrhoea in children. In spite of the choice of bacteria by majority of the respondents as a cause of childhood diarrhoea, the treatment modalities identified was mainly ORS. The significance of ORS usage in the management of childhood diarrhoea irrespective of the cause of the diarrhoea cannot be over emphasized. This is because ORS usage does not only correct dehydration , but also prevents it, as it is responsible for the majority of morbidity and

mortality associated with childhood diarrhoea.[1,5,7,13,14] The use of other home fluids instead of, or in addition to the conventional ORS/SSS was low among the respondents. A study conducted in Maiduguri two years ago on the use of other home fluids in the management of childhood diarrhoea by mothers and other care givers showed a low usage of such fluids.[6] Although, ORS/SSS may be available and accessible to most families in Nigeria, it is important that parents and other care givers appreciate that other "recommended" home fluids can be used in place of the conventional ORS so that both the children and the care givers would have a wider range of fluid to choose from, as the ORS is not palatable to some children. However, fluids with high osmolalities should be avoided in the phase of diarrhoea.[1,13,14]

In the management of childhood diarrhoeal disease, adequate nutrition of the child is only second to proper fluid therapy in priority. The WHO and UNICEF have suggested continued feeding of the child with diarrhoea, thereby preventing malnutrition.[14] Even though some authors have suggested the use of lactose free milk/diet in children with diarrhoea due to secondary lactase deficiency,[15] most literatures advice on continued feeding; especially with breast milk except if there is worsening of diarrhoea with the administration of the milk or if lactase deficiency is confirmed.[1,13] Stopping or diluting feeds of children with diarrhoea may further contribute to malnutrition, growth failure, slow repair of intestinal injury, dehydration and therefore not recommended in the management of childhood diarrhoea.[14]

The assessment of danger signs and prompt referral of children with diarrhoea for possible in patient care is life saving. This is because the clinical condition of children with diarrhoea may progress rapidly downhill in the absence of intervention. Close monitoring in addition to parenteral fluids and drugs may be required in the management of children with danger signs, hence the need for in-patient management, to reduce the morbidity and mortality in such children. Boiling of drinking water and isolation of children with diarrhoea were considered incorrect diarrhoeal preventive measures, because they are not practicable, and usually not recommended. Although boiling of drinking water may be used in disease outbreaks or in the short term, it is not routinely used or advocated in the prevention of childhood diarrhoea generally.

Despite small study population, gaps in knowledge and management practices of childhood diarrhoea were identified. It is therefore important for paediatric care providers to regularize training and retraining of all medical personnel in all institutions on the management of common childhood illnesses like diarrhoea, which accounts for the significant morbidity and mortality in children. Such trainings will improve the overall care and management of childhood diseases both at home and in the hospital setting. The trainings should also target preventive paediatrics as well as counseling especially of incorrect strongly held beliefs in the community, like association of teething with childhood diarrhoea.

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